

## **ENGINEERING STANDARDS UPDATE**

Standards are serious business, but this newsletter isn't.

### **Topics this month:**

- **More ES-EPD Org Change**
- **Just in Time for Valentine's**
- **New Form [2276 - Subcontractor Nonconformance Report \(NCR\)](#)**
- **Hilti KB-TZ Post-Installed Concrete Anchors Away**
- **Training & Qualification**
- **LANL Standards Issued in Jan**
- **C Students**
- **Engineering Processes News**
- **O&M Criterion Changes**
- **DOE Technical Standards Action**
- **National Standards Action**
- **When Good Conduct of Engineering Isn't Followed**

The LANL Engineering Standards: <http://engstandards.lanl.gov/>

**Note: This newsletter has hyperlinks all over but the blue/underlined formatting may not show. Hover your cursor where you might expect one.**

### **MORE ES-EPD ORG CHANGE**

From an email from EPD's Michael Richardson on January 11:

I am pleased to announce our new ES-EPD Electrical Team Leader, Wajdi Ahmad, effective today.

Wajdi has over 25 years of diversified experience in Design Engineering, Procurement Engineering, Construction, and Project Management. He holds a doctorate in Electrical Engineering from Wayne State University. Wajdi also earned a bachelor's degree in Electrical Engineering from Yarmouk University and a master's degree in Electrical Engineering from Wayne State University. His extensive knowledge and firsthand experience in Electrical Design Engineering will be a tremendous asset in our Engineering Services division.

Please join us in welcoming Wajdi in his new position as the ES-EPD Electrical Team Lead.

### **JUST IN TIME FOR VALENTINE'S**

It may not be a coincidence that Valentine's Day and Engineer's Week are both in February given engineers' reputation as great relationship partners and humble people (not).



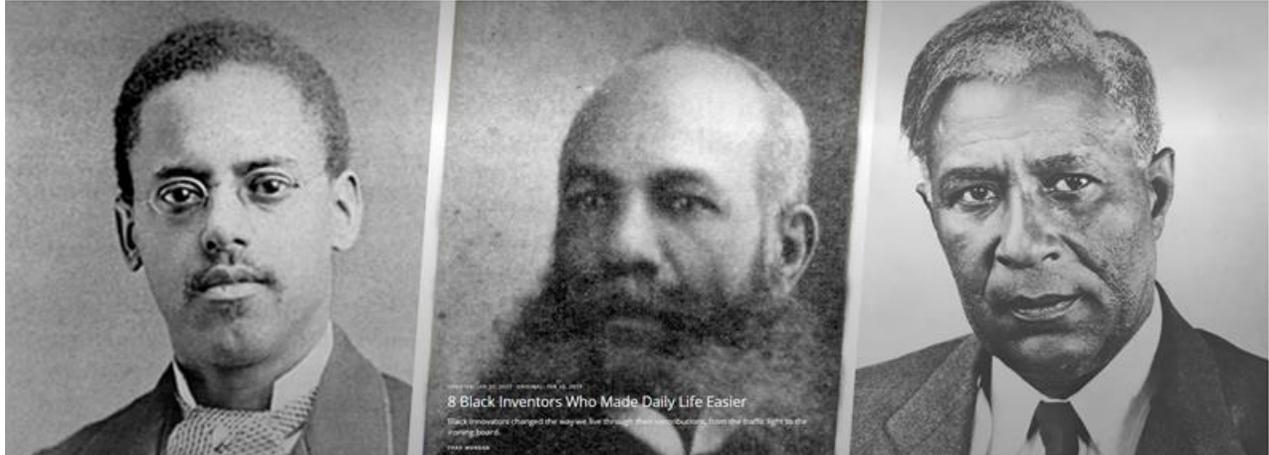
### Top 11 Reasons To Fall in Love With an Engineer

<https://interestingengineering.com/top-11-reasons-fall-love-engineer>

Nice, insightful (and self-serving) list that an engineer or their sig other may appreciate—but the partner will probably still want a fuss made Sunday the 14<sup>th</sup>. Blame Chaucer.

Yes, on the origin of **Valentine's Day**, seems Chaucer made it up...per this oft-cited research article by dad: [https://www.jstor.org/stable/2847741?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/2847741?seq=1#metadata_info_tab_contents)

### BLACK HISTORY MONTH



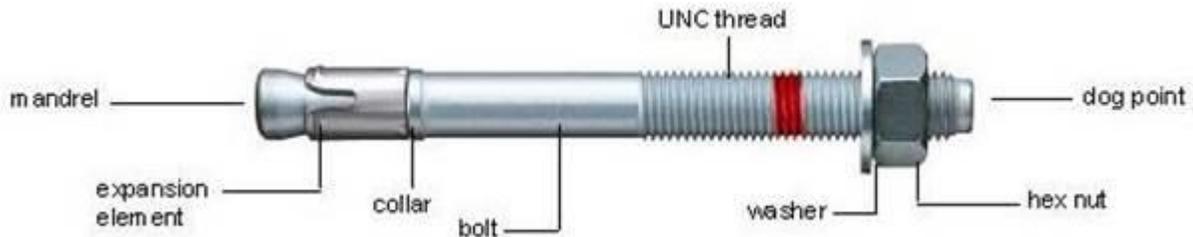
Inventions you ask? Yes: <https://www.history.com/news/8-black-inventors-african-american>

### NEW FORM [2276 - SUBCONTRACTOR NONCONFORMANCE REPORT \(NCR\)](#)

P330-6 on NCRs was recently revised and added Form 2276 for subcontractors to notify the STR of a nonconformance and the proposed disposition. Per Greg Cagle, the form has a section for Engineering and the FDAR. It is very similar to the now-canceled AP-350-410 FM01 and has a table at the end that discusses the different Subcontractor uses of SDDR, NCR, RFI, and variances. With this new 2276 form, SDDR Form 2178 should not be used for such, just problems with meeting the purchase specs for an engineered (custom) item purchase. [HTTPS://IRM.LANL.GOV/FORMS/SHARED/2276.PDF](https://irm.lanl.gov/forms/shared/2276.pdf)

## HILTI KB-TZ POST-INSTALLED CONCRETE ANCHORS AWAY

The pun on “aweigh?” Blame my dad.



For nuclear safety applications, it hasn't been that long since LANL turned away from Drillco Maxi-Bolts, embraced Hilti HDA undercut anchors, and then also allowed the Hilti KB-TZ expansion and HIT-RE 500 V3 adhesive anchors (both with limitations). Well, the TZ is being phased out and replaced by the TZ2 later this year. Our plan is that, when LANL exhausts a healthy TA-55 stockpile and is forced to the TZ2, we'll know enough that the ESM Structural Chapter's Section III can be amended to allow them (non-nuclear use is not similarly restricted). Questions? POC Glen Pappas or Ben Winter.

## TRAINING & QUALIFICATION

### Electrical Standards – Tues, Feb 9, 8:00-noon

Four-hour course [17998](#) covers the electrical engineering standards in Chapter 7 of the LANL Engineering Standards Manual and discusses mandatory requirements and good practices for those involved in electrical design. Strongly suggested for electrical designers, electrical engineers, electrical safety officers, and facility managers. AEs are also encouraged to participate. Taught by Electrical Standards POC Eric Stromberg via Webex.

**For UTrain Courses: Registering:** Go to [UTrain](#), search on course, select and enroll. Disenroll if you have to bail. AEs can also register; use token (CryptoCard) or contact ES T&Q coordinator Yolanda Trujillo at 664-0118 or [yjtrujillo@lanl.gov](mailto:yjtrujillo@lanl.gov) with Z number. Registrants will receive Webex instructions prior to start.

### SWAGELOK SOUTHWEST COURSES (not endorsing, but fyi since we like good pressure safety a la ESM Ch 17)

Join us for our next Tech Talk Live! There is no cost to participate.

**Tech Talk Live Webinar: Hose Selection | Virtual Live Training, free event | 30 minutes  
Thurs., February 4, 2021**

Start time: 10:00 a.m. Pacific Time | 10:00 a.m. Arizona/Mountain Time

Length: 30 minutes [Get more information](#)

About: Grow your expertise in the hose selection process to assure safe, leak-free, and long-lasting installations.

This is similar to the program we did last year, in case you missed it, back by popular demand. To register, simply email [karen.polen@swagelok.com](mailto:karen.polen@swagelok.com) who will send you a link to join.

Not a hose fan?

**Other Tech Talk Live Recordings | Virtual Training, no cost | 30 minutes**

You are invited to watch recordings of past Tech Talk Live training sessions. [Browse recorded webinars here](#)

**LANL STANDARDS ISSUED IN JAN**

**Engineering Standards Manual ESM** STD-342-100 Ch 1 POC Tobin Oruch

ESM-Chapter	Section	Title	Rev.	Date
Ch 1 - General	200	200, Item Numbering and Labelling	9	1/28/2021
Ch 1 - General	200	Attachment 1: CMMS Field Dictionary		1/28/2021
Ch 1 - General	200	Attachment 2: MEL Upload Worksheet		1/28/2021
Ch 1 - General	200	Attachment 3: Parameter Templates		1/28/2021
Ch 1 - General	200	Form 01: CMMS Change Approval Form and Instructions		1/28/2021
Ch 1 - General	210	210, System List	6	1/28/2021
Ch 1 - General	210	Attachment 1: Systems List [Thank Charlie Nuss]		1/22/2021
Ch 1 - General	230	230, Types and Subtypes for Equipment Items	9	1/28/2021

**Did I mention that we completely revised the numbering and labelling standards?** Thanks also to Jacque Seay, Esperanza de la Ossa, Adam Smith and crew, others...

**Also—expect a revised Fire Chapter to post in a couple of days!**

**Master Specs** [STD-342-200](#)

Section	Section/Title	Rev.	Date	Summary of Revision
01 3300	Submittal Procedures		1/19/2021	Att. A - Construction Submittal Log – <b>Major revision reflecting almost a year of streamlining required submittals and their review.</b> Many thanks to Tadz Kostrubala, several discipline POCs, and Christina Salazar-Barnes!!!

**CAD Standards Manual** [STD-342-300](#) POC Scott Richardson

Section	Section/Title	Rev.	Date	Summary of Revision
200	CAD Requirements	5 chg2	1/5/21	Updated Section 214 3.0.D regarding required AutoCAD version from “2021 or newer” to “2020 or newer”

**C STUDENTS**

Now, thanks to efforts by Christina Salazar-Barnes and others in SI-DC, C numbers can be checked out using the same CoE SharePoint Document Number webpage that provides many other doc numbers. <https://coe.lanl.gov/APs/default.aspx>

Whaaat? Construction drawings, in addition to individual sheet numbers that indicate discipline and type of drawing, need drawing numbers to relate sheets, enable uniqueness, and help retrievability in EDRMS. CAD Standards Manual Table 202-2, PI#/C# Application in Complex Projects, defines when one or more “C” numbers is needed for a project. Table 202-1, Construction Drawing & Sketch Title Block Contents, defines a construction drawing number as:

A unique number assigned to the drawing set by SI-DC. It is an alphanumeric/multi-field number and begins with the letter “C”. After the as-built/project records turnover phase, for Technical Baseline drawings, the “CXXXXX” prefix is removed.

Where:

1. CXXXXX- is the unique alphanumeric construction drawing number (see Note 5 below for usage details)
2. –DWG- indicates the document is a drawing.
3. –TABLDG- is the 2 digit TA number and 4 digit Structure number.

If the project involves multiple facilities, use MULT for the Structure number.

If the project involves multiple TA numbers (i.e. – roads, utilities, walkways, etc.) use INFR for the TA and Structure number.

4. “-X-XXXX” is the discipline designator, level 1 followed by the sequential sheet number (A-0001, A-1050, etc. -- same as item #25).

## ENGINEERING PROCESSES NEWS

Per CoE Eng Processes Manager is Sarah Murdock, 667-7788, [sterrill@lanl.gov](mailto:sterrill@lanl.gov):

The following Administrative Procedures have been revised and posted to the COE Administrative Procedures [SharePoint site](#). Always ensure you are working to the latest version of all Engineering Administrative Procedures adopted at your location.

AP-341-404, <i>Master Equipment List (MEL)</i>		VAR-10424 issued 1/28/2021 to supersede parts with ESM Ch 1 Section 200
AP-341-405 <i>Identification and Control of Technical Baseline in Operating Facilities</i> , Rev 5 approved 1/22/2021, effective 2/21/21	Training has been assigned in UTrain for those that were identified as requiring it.	The Word forms will be posted to the COE AP website once the rev becomes effective; for now the PDF is posted for those that want to see what the upcoming changes are

If you have been identified as requiring additional training on an AP you will see an assignment on your UTrain “to do” list.

### More updates

- AP-341-720 *Engineering Construction Submittals*, Revision 0 is currently in the approval cycle. This AP was previously under Project Management but was transferred to Engineering Services.
- AP-341-704 *Item/Service Quality Verification* is a new AP that has been created by a working group to address item verification process for QRL-2 procurements. This AP is

aiming to be approved in time for the next revision of P840-1 *Quality Assurance for Procurements*.

- The FY 2021 Annual AP Priority List is posted to the COE AP site if you would like to see the revisions being worked this year.

Please enter issues with APs in the SharePoint issues database. Use the live button below, same one that's found in the upper right of the Processes SharePoint [homepage](#).



A webpage of the AP pdfs can be reached from LANL Internal with any browser/machine combo (also, you can easily get to [int.lanl.gov](http://int.lanl.gov) from [mymail.lanl.gov](mailto:mymail.lanl.gov)). Once in, you can navigate from the top of the [CoE home page](#) or directly [here](#). On the other hand, if you need the AP Word forms, open a VPN or terminal session and use IE for SharePoint for best results. When all else fails, email Christina Salazar-Barnes which is good advice for many matters.

## O&M CRITERION CHANGES

Operation and Maintenance Criterion and related Preventative Maintenance Instruction (PMI) are standards about which system engineers should be familiar. Below are recent changes issued by MSS-MP, the Maintenance Programs Group of Maintenance and Site Services Division, per Jeremy vonHarders. Implementation is required 30 days from issue date for non-nuclear facilities, 60 days for nuclear facilities. Questions? Contact the document author.

Use Internet Explorer to access them on the SharePoint site if you have issues. Access to all such documents when no direct link is shown below: [https://logistics.lanl.gov/MSS/\\_layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx](https://logistics.lanl.gov/MSS/_layouts/15/start.aspx#/Policy%20%20Procedures/Forms/Public.aspx)

Issued in the past couple of months:

### **PMI: 721-D Wet Automatic Sprinkler System Yearly Inspection and Testing**

- Updated antifreeze replacement steps so that Superintendent can schedule appropriate time for replacement
- Added GL48 acceptance criteria

### **PMI: 721-E Wet Automatic Sprinkler System 5-Year Inspection and Testing**

- Updated antifreeze replacement steps so that Superintendent can schedule appropriate time for replacement
- Added GL48 acceptance criteria

### **PMI: 723-A Fire Pump Engine Maintenance and Repair (sent 1/13/20)**

- Extensive content updates per changes in O&M 723, Rev 6 and NFPA 25, 2020.
- Deleted 723-A.002, *Monthly Mechanical PM*. (still performing Weekly PM)
- Pulled out relevant portions of electric motor ITM and moved to newly issued 723-J, *Fire Pump Electric Motor Inspection, Testing, and Maintenance*.

- Engine/motor maintenance is to be performed by stationary equipment craft and should be scheduled concurrently with the corresponding fire pump testing performed by Fire Protection craft.

Direct access: <https://logistics.lanl.gov/MSS/PMI/723-A.pdf>

**PMI: 723-J Fire Pump Electric Motor Inspection, Testing and Maintenance**

- Pulled out relevant portions from 723-A, *Fire Pump Engine Maintenance and Repair*, to have separate electric motor-driven fire pump ITM and diesel engine-driven fire pump ITM.
- Updated per changes in O&M 723 and NFPA 25 2020
- Engine/motor maintenance is to be performed by stationary equipment craft and should be scheduled concurrently with the corresponding fire pump testing performed by Fire Protection craft.

Direct access: <https://logistics.lanl.gov/MSS/PMI/723-J.pdf>

**DOE TECHNICAL STANDARDS ACTION**

[Tech Stds Program](#) [postings](#) in the past month: None.

**NATIONAL STANDARDS ACTION**

LANL's [IHS Eng Workbench](#) online codes & standards subscription news:

Document number: **ASCE/SEI 43-19**

Publication Date: **2019, posted 1/21/2021**

Title: **Seismic Design Criteria for Structures, Systems, and Components in Nuclear Facilities**

Type of Change: **Complete Revision**

This standard is invoked by ESM Chapter 5 Structural Section III on nuclear which is being revised (along with Sections I and II) by Glen Pappas to adopt the 2019 edition by the end of March. Chapter primary POC Mike Salmon led the ASCE work on this revision!

**WHEN GOOD CONDUCT OF ENGINEERING ISN'T FOLLOWED**

From a presentation by Chief Pressure Safety Officer Ari Swartz to the Pressure Safety Committee a while back. Follow ESM Chapter 17!

## Non-Compliant Designs



### LAST MONTH'S UPDATE TOPICS

Miss an issue? The archive is at "Monthly Update" on the Standards homepage. Last month's topics:

- **Memes**
- **ES-EPD Org Change**
- **Contact Mod for DOE O 420.1C Chg 3 (LtdChg), Facility Safety**
- **Training & Qualification**
- **LANL Standards Issued in Dec or So**
- **Engineering Processes News**
- **O&M Criterion Changes**
- **DOE Technical Standards Action**
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- **When Good Conduct of Engineering Isn't Followed**

The views expressed in this email are not necessarily those of my employer.  
To request a change to this newsletter's distribution, please contact me.

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